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# Post-tonsillectomy secondary haemorrhage

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**Summary**

*This paper compares the incidence of secondary haemorrhage in post-tonsillectomy patients who were discharged 48 hours after operation (2.8%) with those discharged at 24 hours (3%). There was no significant difference between the groups. A higher incidence of secondary haemorrhage in those patients in whom diathermy was used for haemostasis rather than ligatures ($P<0.01$) supports previous studies.*

## Introduction

Personal accountability for the cost of health care, together with the reduction in National Health Service funding, prompted this study. We wished to know whether beds could be used more efficiently without increasing morbidity by discharging patients earlier after tonsillectomy.

Haemorrhage is the most common and serious complication following tonsillectomy *(1)*. The reported incidence of post-operative bleeding varies from 0–10% *(2,3,4)* and the majority of severe postoperative bleeds occur in the first 24 hours *(5)*. A severe haemorrhage is defined here as one that requires a second anaesthetic, with its increased morbidity, for its control *(6)*.

Secondary haemorrhages tend not to be as severe as reactionary haemorrhages, and they usually occur within seven days of operation *(7)*. However, a case of secondary haemorrhage occurring 31 days post-tonsillectomy, which required a four pint transfusion and ligation of the external carotid artery has been described *(8)*.

Carmody *et al* reported that secondary haemorrhage was more common in adults than in children, and in those patients in whom diathermy had been used to achieve haemostasis *(7)*. He also stated that neither the lack of experience of the surgeon nor the sex of the patient were of significance. Recently salicylate ingestion has been shown to increase significantly the rate of postoperative haemorrhage *(9)*. It is also a commonly held belief that poor eating habits following tonsillectomy increase the rate of secondary haemorrhage.

Prior to December 1983 the patients in this unit were discharged two days post-tonsillectomy and one day post-adenoidectomy. This seemed illogical as it has been shown that bleeding post-adenoidectomy, sufficient to require a second anaesthetic, is at least as common as that following tonsillectomy *(5)*. Therefore it was decided to discharge all tonsillectomy patients after 24 hours, provided that there were no extenuating circumstances, viz. persistent pyrexia, reactionary haemorrhage or poor home conditions. This study compares the incidence of secondary haemorrhage in tonsillectomy patients discharged at 24 and 48 hours.

## Materials and Methods

Two six month periods in consecutive years were compared (December 1982–May 1983 and December 1983–May 1984). The tonsillectomies were performed by various surgeons ranging from Senior House Officers to Consultants. All were performed by dissection and haemostasis was achieved either with ligatures or diathermy. A total of 511 tonsillectomies were undertaken either alone or in combination with other procedures, 247 were discharged 48 hours post-operatively and 264 at 24 hours. All patients were instructed to return to the ward in the event of haemorrhage. The distribution of patients is shown in Table 1.

TABLE I *Age and sex distribution of the 24 and 48 hour discharge groups*

| *Discharge time* | *Age* | *Male* | *Female* | *Total* |
|---|---|---|---|---|
| 48 hours | <16 | 72 (29.1%) | 93 (37.7%) | 165 (66.8%) |
| | >16 | 27 (10.9%) | 55 (22.3%) | 82 (33.2%) |
| | All | 99 (40%) | 148 (60%) | 247 (100%) |
| 24 hours | <16 | 71 (26.9%) | 101 (38.3%) | 172 (65.2%) |
| | >16 | 22 (8.3%) | 70 (26.5%) | 92 (34.8%) |
| | All | 93 (35.2%) | 171 (64.8%) | 264 (100%) |

## Results

During the period December 1982–May 1983, 247 patients were discharged after 48 hours. There were seven secondary haemorrhages (2.8%). Between December 1983–May 1984, 264 patients were discharged after 24 hours. During this period there were eight (3%) secondary haemorrhages. There is no statistically significant difference between the two groups ($x^2 = 0.01$, $P>0.9$). All haemorrhages were minor, neither transfusion nor return to theatre was required. They settled quickly and were treated by observation and antibiotics. All occurred between the 4th and 10th post-operative days; the mean for the 48 hour group was 7.1 days (median 7) and for the 24 hours group six days (median 5.5). The results are shown in Table II. Neither sex ($P>0.8$) nor age ($P>0.5$) influenced the incidence of secondary haemorrhage (Table III).

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TABLE II *The distribution of secondary haemorrhages in the 24 and 48 hour discharge groups*

| *Discharge time* | *Age* | *Male* | *Female* | *Total* |
|---|---|---|---|---|
| 48 hours | <16 | 1/72 | 2/93 | 3/165 |
| | ⩾16 | 2/27 | 2/55 | 4/82 |
| | Total | 3/99 | 4/148 | 7/247 = 2.8% |
| 24 hours | <16 | 2/71 | 4/101 | 6/172 |
| | ⩾16 | 1/22 | 1/70 | 2/92 |
| | Total | 3/93 | 5/171 | 8/264 = 3% |

TABLE III *The incidence of secondary haemorrhage with respect to sex and age*

| *Age* | *Male* | *Female* | *Total* |
|---|---|---|---|
| <16 | 3/143 | 6/194 | 9/337 |
| ⩾16 | 3/49 | 3/125 | 6/174 |
| Total | 6/192 | 4/319 | 15/511 |

Five of the 41 cases (12%) in whom diathermy was used for haemostasis returned with a secondary haemorrhage, whereas 10 of the 470 cases (2%) in which ligatures were used bled. This is significant ($x^2 = 13.47$; $P<0.01$).

## Discussion

This investigation of the incidence of secondary haemorrhage following tonsillectomy was undertaken to see whether patients could be safely discharged from hospital after 24 hours. It has been shown that discharge at this interval does not increase the rate of secondary haemorrhage. Our results are in concordance with those of Fox who reported a 5% incidence of secondary haemorrhage *(10)*.

Although diathermy has been shown to reduce the incidence of reactionary haemorrhage, which is responsible for the majority of post-tonsillectomy fatalities, it is associated with a higher incidence of secondary haemorrhage *(7)*. Other workers have reported incidences of secondary haemorrhage following the use of diathermy ranging from 1.8% to 7% *(7,11)*. In this study the incidence of secondary haemorrhage associated with the use of diathermy was much higher, namely 12%. Perhaps, the use of this modality for haemostasis should be restricted.

In view of the current trend to accompanied admission we find that both patients and parents welcome early discharge from hospital following tonsillectomy. It has been stated that approximately 30% of ENT operations carried out in the United Kingdom involved tonsillectomy *(12)*. By adopting early discharge, considerable economies can be made safely by both the parents and the financing authority. Since the end of the six month trial period the policy of all the surgeons in this unit is to discharge after 24 hours, provided that the patient is apyrexial and the parents are capable of looking after the child at home.

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